

Application Number 09/858,185
Amendment dated April 16, 2004
Reply to Office Action of October 16, 2003

Amendments to the Claims

Please cancel claims 5-7 and 13-15.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Please amend the claims as follows:

1. (Currently Amended) A temperature control system for a workpiece chuck comprising:
 - a fluid circulation system for circulating a temperature control fluid through the workpiece chuck; and
 - a fluid recovery system coupled to the fluid circulation system for recovering a ~~portion of~~ the temperature control fluid from the fluid circulation system, the fluid recovery system comprising:
 - a gas inlet for allowing gas to be forced into the fluid circulation system and circulated through the fluid circulation system to carry ~~the~~ a first portion of ~~the recovered~~ temperature control fluid through the fluid circulation system, ~~and~~
 - ~~an outlet connected to a reservoir, the reservoir receiving from the outlet~~ the gas circulated through the fluid circulation system and the first portion of ~~the recovered~~ temperature control fluid, the reservoir comprising an outlet, the gas and the first portion of recovered temperature control fluid received by the reservoir displacing a portion of the gas with vapor of the temperature control fluid out of the reservoir through the outlet,
 - a heat exchanger for receiving the displaced gas with vapor and condensing the vapor to produce a second portion of recovered temperature control fluid,
 - a separator for receiving the displaced gas and the condensed second portion of the recovered temperature control fluid and separating the displaced gas from the condensed second portion of the recovered temperature control fluid, and

a fluid line for carrying the condensed second portion of the recovered temperature control fluid from the separator to the reservoir.

2. (Original) The temperature control system of claim 1, wherein the temperature control fluid comprises a hydrofluoroether (HFE).
3. (Original) The temperature control system of claim 1, wherein the temperature control fluid comprises methoxy-nonafluorobutane (C₄F₉OCH₃).
4. (Original) The temperature control system of claim 1, wherein the gas forced through the fluid circulation system is air.
5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Currently Amended) The temperature control system of claim 6 1, wherein the fluid recovery system further comprises a gas line for venting separated gas from the separator to the atmosphere.
9. (Currently Amended) A method for controlling temperature in a workpiece chuck comprising:
 - providing a circulation system for circulating a temperature control fluid through the workpiece chuck; and
 - coupling a fluid recovery system to the fluid circulation system for recovering a ~~portion of~~ the temperature control fluid from the fluid circulation system;
 - circulating a gas through the fluid circulation system to carry ~~the~~ a first portion of

the recovered temperature control fluid through the fluid circulation system; and
providing a reservoir for receiving the gas circulated through the fluid circulation
system and the first portion of the recovered temperature control fluid, the reservoir
comprising an outlet, the gas and the first portion of recovered temperature control fluid
received by the reservoir displacing a portion of the gas with vapor of the temperature
control fluid out of the reservoir through the outlet,

routing the displaced gas with vapor of the temperature control fluid to a heat
exchanger, the heat exchanger condensing the vapor of the temperature control fluid to
produce a condensed second portion of the recovered temperature control fluid,

routing the displaced gas and the condensed second portion of the recovered
temperature control fluid to a separator, the separator separating the displaced gas from
the condensed second portion of the recovered temperature control fluid, and

routing the condensed second portion of the recovered temperature control fluid
from the separator to the reservoir.

10. (Original) The method of claim 9, wherein the temperature control fluid comprises a hydrofluoroether (HFE).
11. (Original) The method of claim 9, wherein the temperature control fluid comprises methoxy-nonafluorobutane (C₄F₉OCH₃).
12. (Original) The method of claim 9, wherein the gas forced through the fluid circulation system is air.
13. (Canceled)
14. (Canceled)
15. (Canceled)

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16. (Currently Amended) The method of claim ~~14~~ 9, further comprising venting separated gas from the separator to the atmosphere.